

ABSTRACT OF THE DISCLOSURE

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This invention reduces degradation in image quality and improves altered portion specifying accuracy in a digital watermark technology. For this purpose, an apparatus of this invention inputs image data and information such as a copyright holder name to be embedded in the image data (S1, S2). A mask pattern having a blue noise characteristic for intermediate- and high-frequency components is set at the image data start position, and pixel data at a target embedding position in the mask pattern is quantized (S5). The quantization error at this time corresponds to the bit information to be embedded at that position. This processing is repeatedly performed for the entire image (S6 - S9).